

Packard (J. H.)

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ON SOME OF THE SURGEONS OF THE LAST CENTURY.

BY

JOHN H. PACKARD, M.D.,

PHILADELPHIA.

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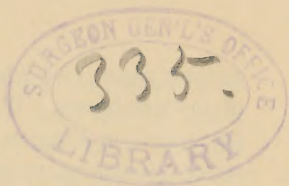
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ON SOME OF THE SURGEONS OF THE LAST CENTURY.

A RECENT writer has said that among the commonest tricks played upon us by the association of ideas, is that which leads us to assume that ancient times were populated by ancient people. And among the earliest terms of disparagement which children are apt to hear, as applied to men and things, is the word "old-fashioned." This conveys the impression of slow, awkward and feeble mental and physical action, such as generally characterizes the old, and which the observant eye of childhood is quick to note with impatience.

A superficial acquaintance with the writings of the surgeons of former days—say of the last century—is very apt to give the idea that they were grave and formal men, slow of speech, uncouth in dress, and awkward in action. Many of the portraits and other illustrations found in their works would confirm this view. We read their text, with its curious type, its quaint diction and roundabout phrases, its antiquated spelling, and it seems to us that their manners must have been as set and precise, their movements as slow, and their very thoughts as dull,

as their pages look when contrasted with those of modern books. We imagine the old-school physician or surgeon as having a gravity, a stately politeness, incompatible with quick and dexterous movement. When he travelled, he went on horseback, in a chair, a chariot, or a stage-coach, taking two days for a journey which we now make in two hours. The presses on which his works were printed would bear just about the same relation, as to rapidity, with those which are now teeming with the multitudinous literature of the present day.

Let it not be forgotten, however, that in those times every gentleman was a master of sword-play ; that machines had not yet made manual dexterity a matter of comparatively small importance ; and that for a surgeon rapid and skilful movement meant the shortening of torture for his patient. I make no doubt that those antiquated and, in our view, clumsy instruments, were wielded by hands as deft as the best of those of our time. The eyes which looked upon them as new inventions were as keen, the tongue which explained their merits to admiring students as ready, as those which now note their defects or extol later improvements upon them. The fact is, that this is simply a world of recognitions and combinations. When the wise man of old said, "There is nothing new under the sun," he uttered a truth far deeper than most of us realize. For millions of years the materials of the world and its surrounding atmosphere, under the forces

of nature, have existed and undergone their appointed changes. How long ago we know not; how, we know not; we know only the bare fact, that man came upon the scene, began to observe, to criticise, to make and to write history. What he first observed we know not; but the first recorded combination was when he sewed fig leaves together to make himself an apron. This was only an adaptation of existing things to a purpose. Since then he has simply gone on recognizing and combining; and not one individual of the race has lived long enough to be more than an ephemeral witness of the results thus induced. With a perpetual change of actors, and a gradual increase in their number, the play has been one and the same, ever repeating and repeating itself. The boys and girls have sported, the youths have loved, the men and women have schemed, lost and won in the game of life, the old have drivelled and faded away, in continual, never-ending succession. Nothing has really changed since the days of the patriarchs except relatively. Morally, man is the same; his passions, his ambitions, his jealousies, his meannesses, and his generousities, are set forth in the earliest known records of the race just as in the latest newspaper. Physically, he is the same; could we obtain the fresh body of one of the ancient shepherd-kings of Egypt, it would answer as well for anatomical study or demonstration as that of the pauper who died yesterday in one of our almshouses. It is only in his

wider acquaintance with the world around him, in his increased power through discovery, that he has changed. Materials and forces were everywhere in the time of Adam and Noah, just as they are now; but they were hidden. Gradually the knowledge of these things dawned upon men, and new combinations were made; not new things, but revelations of the possibilities contained in what had always existed. When

“Terah, Nahor, Haran, Abraham, Lot,
The youthful world’s gray fathers in one knot,
Did with intente looks”

gaze in admiring awe upon the rainbow, they saw just what we see now in the sky after a summer shower, no more and no less; but we have to some extent solved the mystery which to them was absolute.

In the course of the revelations of existing things, a combination of materials and forces was developed which gave us the art of printing, and thenceforward the spread of knowledge was vastly aided. But a few centuries and we come to our own time, the age of steam and electricity, and of popular education. Now we find at once an immense increase in the body of workers, and in their means of utilizing their results. Wider views brought more accurate classification, clearer ideas of the natural history of health and disease; modern methods of research, also brought about simply by new combinations of forces and things which have existed since the world was made, have placed the science of

medicine on a plane far higher than that which it occupied at the beginning of this century.

But I imagine that some of you may begin to ask what all this tends to, and why all this array of truisms should be presented? I do not think, however, that I am wide of my subject. We, of the nineteenth century, are apt to plume ourselves upon the wonderful achievements of our age, and to think, if not that wisdom shall die with us, at least that it began with us. We look at the books and periodicals which pour forth from the press—more in bulk than any one man can find time to read, even if nothing else claims his attention. We catch the hurrying, bustling, commercial spirit of the day, the mis-called “practical” man’s idea that the great point is to know the latest views, to be up in all the newest things, so far as they will help him to take the lead of his rivals, and to build up a lucrative business.

This is one way to look at the matter ; but there is another, and I think a better. We are not merely a fleeting generation of midges, dancing in the sunshine for our little day, come from the night, and to pass away into deeper night. We are not even actors who appear in solemn procession on the stage, strut through our parts, and make our exit. We are the heirs of the ages, and have work to do in order that we may transmit to those who come after us the legacy which came into our hands, with such increase of value as may be fairly required of us. Surely it is well that men engaged in such

a task should occasionally look back and trace the steps of their predecessors; that they should mark the points reached by the great climbers of past times, and the different outlooks gained by them over the field of scientific truth.

I wish then, to-day, to ask you to go back with me into the last century, and to survey the work done by some of the eminent men who were then the leaders of thought in our profession. Three of them particularly—men whose names are known wherever surgery is taught, but who are unfortunately only names to the vast majority of even the more educated among medical men—will engage our attention. They are Lawrence Heister the German, Jean Louis Petit the Frenchman, Percival Pott the Englishman. In the brief time at my disposal, I can do but scant justice to the claims of these worthies to the respect and even veneration of their successors. Enough if evidence is afforded of the value of their labors, and of their title to high place in the republic of science; more than enough, if what I shall say may lead others to share with me the pleasure and profit of occasional intercourse with them in the writings by which alone the world now knows them.

I have selected these three because they were nearly contemporary. They represented the three leading nations of the world in their time; they embraced in their works nearly the whole scope of surgery as then known; and they seem to me to have been men who fitly closed what may perhaps be called the middle age of that science.

Curiously enough their lives extended over almost exactly similar periods, Heister and Pott living 75 years each, and Petit 76.

Heister was born in 1683, and his *System of Surgery* was published in German in 1718, in Latin in 1739. An English translation of it appeared in 1742, and the sixth edition in 1757.

In his preface he gives an account of his studies, and of his experience in military surgery. In 1710, being then 27 years of age, he was, he says, "beyond all expectation, called by the Republic of Norimberg to teach anatomy and surgery, as public professor in the University of Altorf. In order to qualify himself for the duties of this position, he made a tour into Great Britain, where he says he was "from spring to autumn, collecting everything new in the several branches of physics." On beginning his labors, he found himself perplexed for want of a convenient manual of surgery; and you will pardon my detaining you by a quotation, asking you to bear in mind that its date is 1739, not quite 150 years ago—less than twice the life of many persons whom we know.

"If any one," says he," examines the best books, such as the *Microtechnia* of VanHoorn, the *Operations* of Nucke, etc., which were at that time consulted not only by our surgeons, but also by our university professors, for teaching and learning the art, it will readily appear how imperfect and insufficient they are to give a just notion of any one branch, much more of the whole system or body of surgery, since

they describe only a few operations, and those too imperfectly ; taking little or no notice of the doctrine and treatment of wounds, fractures, luxations, tumors and ulcers, which make the most considerable part of surgery, and in which a learner ought to be the most fully instructed. It is true, the works of Guido Cauliacus, Aquapendens, Parey, Scultetus, Solingen, and some other writers of the last century, are very full and explicit in all or most of the operations, and the five kinds of disorders before-mentioned. But even in these we must not expect to find the many improvements, emendations, and discoveries made by the moderns ; and their practice being mostly obsolete, they must consequently be allowed to be unfit for the instruction of learners. And it is an objection to many of our books on surgery, of a more modern date than the preceding, that they have either been compiled by physicians little conversant in chirurgical dissections and operations, as those of Barbet, Verduc, Bonteck, Doley, Blancard, Chanier, Juncken, Vauguion, Le-Clerc, etc., in which many of the old errors are continued, and not a few things stated otherwise than will be found in practice ; or else they have been restrained to but one or two subjects only, as the bones, wounds, tumors, bandages, operations, etc., besides their being written either in a rude, or a foreign language, unknown to most of our surgeons."

The system of surgery which was intended to supply the defects thus set forth was pub-

lished in German in 1718. "And," says the ingenuous author, "from this time it is that we have had better or more expert surgeons in Germany than before, many of whom have since often declared to me, that they had drawn most of their knowledge from my Surgery."

In the following year, Heister "received a most gracious call to the public Professorship of Anatomy and Surgery in the Julian University of Helmstadt, from his Britannic Majesty, as Duke of Brunswick and Lunenburg." The "care and trouble of packing up and removing his goods, and the fatigue of a long journey, added to the multitude of business, and many avocations consequent upon his new office," are now urged as the reasons which compelled him to postpone the issuing of his work in Latin, an event which did not take place till 1739, or about twenty years later.

Now, when the really recent date of this writing is considered, you will, perhaps, scarcely be ready to believe that the Julian University at Helmstadt was abolished, as such, seventy-eight years ago, in 1809—just ninety years after the time when Heister was called to professorial honors in it. Of the Republic of Norimberg, or the University of Altorf, I can find no other mention anywhere. Altorf seems to be known chiefly as the alleged scene of William Tell's feat with the apple; but even this, as everybody is aware, is now suspected to be a mere myth. As to the authors spoken of, the only one with whom there

is, at the present day, any general acquaintance is Paré, whose quaint pages have for some reason or another always found friends, and it seems likely that they always will. But of Guy de Chauliac, Fabricius ab Acquapendente, Scultetus, it may safely be said that while most educated men have heard their names, scarcely one in a thousand could be found who has ever read a line of their works. Still deeper obscurity envelops the other authors who had, in Heister's opinion, failed to give a just notion of the body of surgery, or of the many improvements, emendations, and discoveries made by the moderns. Not yet 200 years ago, men of sufficient note to have written and published works for the guidance of their professional brethren, yet of most of them we have really less information than of some of the Egyptian or Assyrian kings. To what a depth of oblivion must most of the writers of the present day, contributing their drops to the ocean of literature, look forward !

Of Petit we know much less. Born in 1674, he died in 1750 ; and for some unexplained reason it was not until twenty years afterward that his pupil, Lesne, undertook the publication of the works his master had left in manuscript. That the latter had intended to place them before the world himself, appears from the fact that he had had ninety plates engraved and printed to the number of 2,000. He had not, at the time of his death, written all of the text corresponding to these plates, but

they were issued, as the editor tells us, because “he judged of the surplus that it would always be an advantage to young surgeons to have so complete an arsenal of instruments, most of which had been invented or improved by M. Petit.”

M. Lesne gives us to understand that his illustrious teacher had contemplated the preparation of a general treatise upon surgical maladies and the operations for their relief. He adds, with a charming simplicity of faith : “One would judge, from what he has left us of his work, that this treatise would have availed to establish forever the principles of the art.”

A simple instance may show how little foundation existed for such confidence. In Vol. III. of the works, at p. 180 *et seq.*, this eminent man gives an account of a case in which he amputated the thigh of an officer of distinction, for the effect of a gun-shot wound received twenty years previously ; on the separation of the ligature bleeding occurred, and was checked for a time by a button of vitriol, but when this came away, and fresh bleeding took place, a bandage was put on and the stump watched by four surgeons, relieving one another at intervals of an hour. Finally an apparatus suggested itself, with a body belt, a sort of tourniquet, and a plate to cover the face of the stump ; all this being held in place and connected by straps and buckles.

At the present day, the merest tyro would simply apply another ligature ; and why such an

expedient did not occur to the great French surgeon would seem to me unaccountable, except on one ground. He cautions his readers against tying the vessels too tightly, for fear of cutting them through, and thus causing hemorrhage either at once or shortly afterward. Hence, as a matter of course, when the ligature came away by slipping off, the vessel not being occluded, there would be no more reason for trusting to another tying ; this resource seemed to have failed. It appears that he always afterward regarded the ligature as a thing to be avoided, except in cases of emergency, as in dealing with large numbers of cases in military surgery. His compression apparatus was, in his view, the acme of security against hemorrhage.

It is a curious coincidence that Percival Pott's works were also published after his death by his pupil and son-in-law, James Earle. Pott was born in 1713, and was apprenticed at the age of 14 to Mr. Nourse, one of the surgeons to St. Bartholomew's Hospital. "At that time," says his biographer, "the art was miserably defective; the instruments were clumsy and unmanageable; the operations unscientific and unnecessarily painful; the established mode of practice, encumbered with a farrago of useless medicines and applications, tended rather to mislead than direct the enquirer; prescription too frequently held the place of reason, and want of real knowledge was concealed under a pompous garb and specious demeanor." . . . "Painful and

escharotic dressings were continually employed, and the actual cautery was in such frequent use, that, at the times when the surgeons visited the hospital, it was regularly heated and prepared as a part of the necessary apparatus. In the works of several authors who flourished in the early part of our author's life, we have contrivances for improving these dreadful instruments. Mr. Pott's tutor rigidly adhered to the established practice, and treated with supercilious contempt the endeavors of his pupil to recommend a milder system."

In 1744, Pott became an assistant, and in 1749, full surgeon at St. Bartholomew's. In 1756, he sustained a severe fracture of his leg, and it was during the enforced idleness consequent upon this injury that he began to turn his attention to authorship, preparing his essay on ruptures. About 1765, he undertook the work of teaching, giving his lectures at first in his own house. The efforts by which his name has been principally distinguished, are his work on fractures, published in 1768, and that on curvature of the spine, which appeared eleven years later. He closed his long, busy and useful life in 1788, carrying on a very active practice to the last.

Heister's work is in the nature of a cyclopædia, and full of evidence of the study of the writings of his predecessors and contemporaries.

Petit's editor says of him: "He only read books on surgery in order to get a general idea of the progress made by the art down to his

time ; he made little account of the erudition which gives a learned air to mediocre talents ; when he treated of a subject, he always sought to widen the limits placed upon it by his predecessors."

"Mr. Pott," says Earle, "always professed great value and respect for the early writers on the art, and perused their voluminous works with great diligence and sagacity. He frequently observed that, though no great advantage could be derived from them in the practical part, yet whoever studied them would be amply repaid by their accurate description of diseases which they portrayed from nature."

I do not propose to take up systematically the study of these works, but merely to dip into them here and there, and to note the points of difference and of resemblance, those in which they may seem to us to have been in the dark, and those in which they touch very closely the views and practice of the present time.

Heister and Petit both had opportunities of somewhat wide experience in military surgery. Pott's field of action was wholly civil, and he appears to have been largely engaged in private practice as well as in that of the hospital, with which, as he himself said, he was connected as man and boy for fifty years.

We cannot but be impressed with the difference between the last century and the last half of this, in the character of military surgery. Sword and bayonet wounds were then extremely common ; now they are very rare. Then again,

the round balls, the clumsy and inefficient firearms, and the less powerful explosives, made the nature of the wounds often much less serious than those with which we are now familiar. Another curious fact has impressed itself upon me within the last few years. Surgeons in civil life, and especially those connected with large hospitals, have at present more experience in wounds from firearms than many army surgeons formerly had. So common is the use of the pistol, that shot-wounds are among those which most frequently present themselves. And I need not dwell upon the very analogous character of railroad and machinery crushes to that of the injuries from cannon-shot which so impressed the military surgeons of the sixteenth century.

Modern life, along with many comforts and luxuries, has brought new sources of suffering and danger. It has also, however, seen the introduction of vastly improved appliances for the relief of one and the prevention of the other.

Perhaps I need hardly dwell upon the fact, which is patent on almost every page of the books I am now discussing, that the sovereign anodyne, in the view of all these men, was blood-letting. They had, indeed, the syrup of poppies, the theriaca, the confectio mithridatii, but it is amazing to see how diligently they opened veins whenever they found their patients in pain.

Another curious matter is the vagueness of

the knowledge of anatomy which is shown by our authors. Of course their opportunities for dissection were limited, and, in fact, many students of that day learned all the little they knew of the structure of the human frame by the mere seeing of the demonstrations made upon two bodies a year in an amphitheatre. Still less did they know of pathology. They looked upon disease with a sort of myopia, and failed to get any general view of the classification of disorders. Hence it would be unreasonable to expect that their treatment, based upon an imperfect anatomy and physiology, and without any system of pathology, should be otherwise than empirical. Yet they were shrewd observers, and no doubt did a sort of rough justice to their cases, such as possibly may not compare unfavorably with the practice of some of our graduates, who are learned in all the mysteries of the metric system, bacteria, and microscopic appearances.

Pott closed his eyes upon this world just at the dawning of a new era—the era of generalization. Thirty-seven years before this time, Pott being one of the senior surgeons at St. Bartholomew's Hospital, John Hunter had been for a short period one of the students in attendance upon the lectures there. Hunter was then a young fellow of twenty-three, and probably was scarcely known by the lecturer, who little thought what a genius sat before him listening to his words. Whether they ever came into contact in after life I do not know. Hunter, of

course, became connected with St. George's Hospital, where, three years before Pott's death, he performed what was, it seems to me, one of the most brilliant operations the world ever saw,—the ligation of the femoral artery for popliteal aneurism. Consider all the circumstances—the fact that such cases had previously been condemned to amputation, that the course pursued by Hunter was the result of deduction from an observation made in one of the lower animals, and that it opened the door to a wide field of life-saving surgery—and I do not think you will regard my expression as extravagant. Moreover, this was but an incident in the life of the man who, I think more than all others, was active in the widening of the scientific basis of surgery. He led the van in bringing in all the teachings of human and comparative anatomy and physiology as aids to the treatment of surgical disease.

But I have been drawn into a digression. All I meant to have said was, that the three great men who are the special subjects of this desultory talk must not be judged by the standards of the brighter light and wider view, of the independent and comprehensive thought, which their successors enjoyed. Possibly, for such is sometimes the working of human nature, they would have resented the rough encroachment of new views and theories upon those they had set up and taught. Men are apt to be charitable to those who have had no chance to oppose them, and I note that both Heister

and Pott speak with much more respect of their departed predecessors than they do of their contemporaries who held contrary opinions.

With regard to injuries of the head, we find that Petit left but a portion of his article completed ; but his editor refers to a memoir presented by him to the Académie Royale de Chirurgie, in which he pursues the subject ; and from the plates (without corresponding text) in the work before us, it is clear that he had intended to discuss the operation of trephining. On the Continent it is plain also that the instruments used for this purpose were immensely large and clumsy, resembling the brace and bit now commonly employed by carpenters. For Heister also represents them of this form ; and in speaking of the method of procedure, advises that the surgeon, setting the point of the perforating trepan, a sort of awl or gimlet, on the skull, should place his left hand on the top of the instrument, and then rest his chin or his forehead on his hand, while with his right he slowly revolves the borer. Having made such a puncture as he desires, he then puts the trephine itself in place, with a central spindle, which is inserted into the hole previously bored. It is worth while to note the shape of the trephine itself. Both Heister and Petit represent it as like that of modern times, the frustum of a cone, and with spiral grooves on its outer surface. This shape was for a time abandoned for the cylindrical, and has been within the last fifty years re-introduced as a novelty.

Pott does not speak of the exact shape of the trephines used by him. In Scultetus (1741) we find representations of the modern form of the instrument, with simply a handle. When this became the prevailing style I cannot say.

As to the indications for trephining, it is well known that the views held in the sixteenth and seventeenth centuries were in favor of a very free resort to the operation, which, in spite of Pott's advocacy, as well as of that of Gooch and other able writers, subsequently came to be regarded with much timidity. At present the pendulum of opinion is swinging back again, and surgeons are far more ready with the trephine than they were twenty years ago.

Heister spoke of this matter more cautiously than did Pott. He refers to the danger of injury to the *dura mater*, and says: "For this reason I am induced to condemn the advice of those, as very unsafe, who direct to trepan the cranium immediately upon every slight disorder of it."

One point seems to me curious, and that is, that none of these surgeons had noted the fact of irregularity of the pupil of the eye as a result of intra-cranial pressure.

Another singular fact is, that while Heister advises that the incision to lay the bone bare should have the form of a cross, or of the letter **X**, **V**, or **T**, Pott speaks uniformly of cutting away a circular piece of the scalp. And we find in Hey's *Surgery*, published in 1807, an argument against this practice, which

would seem up to that day to have generally prevailed among English surgeons.

I cannot pass from this subject without one more reference to Petit, who would, in the opinion of his editor, have settled for all time the principles of surgery. He is quoted as discussing "the nature of the polypous fleshy masses sometimes found in ancient contusions" (of the head), "the opening of which has been long delayed." He does not think that these masses, which he believes to be formed from the blood clots constituting the tumor, are different from the polypi which are found adhering to the inner surface of the ventricles of the heart, nor from the fleshy masses found within true aneurisms, nor from the clots of false aneurisms. He says, further, that these polypous masses "can absorb nourishment, grow more or less, and even become adherent to all the surface of the cavity enclosing them." This must remind us of the elaborate steel plate given by Tulpius, of a polypus of the heart--nothing more or less than such a clot as may be noted in the autopsy of any one who has died slowly. It seems to me that the wonder is that these ancestors of ours, with such rudimentary ideas of physiology and pathology, should have built up their surgery as soundly as they did.

Heister, like all his contemporaries, hesitated to place entire confidence in the ligature as a means of controlling hemorrhage. And in speaking of wounds in the neck, he gives what must seem to us a most extraordinary piece of

advice. If the internal jugular vein is extensively divided, he recommends that it should be tied; but if the carotid artery or any of its branches, he would have us trust wholly to pressure, kept up by compresses held in place with the fingers. Yet, when the matter is looked at more closely, the explanation seems evident. The idea of the men of that day was that the current of blood in the arteries, by its force, detached the ligature, while the more sluggish flow in the veins was easily controlled.

With regard to wounds of the chest, there is but little to note, in view of the fact that auscultation and percussion were unknown in the last century, and hence that the study and treatment of these injuries were carried on at a great disadvantage.

Coming now to the diseases and injuries of the abdomen, I would call your attention to the article in Petit's work on tumors formed by the retention of bile in the gall bladder, often mistaken for abscesses of the liver; and to another on the parallel existing between the retention of bile and biliary calculi, and retention of urine and stones in the bladder. There is, in these two papers, much that may be read with profit by any one at the present day; much that would show, if such proof were needed, that the author was a man of bold and independent habit of mind.

In a recent article published by myself, on a case of pistol-shot wound in which laparotomy was performed, I stated that this course was

“dimly foreshadowed” in 1855 by Guthrie. Soon after this was written, I was not a little surprised to find that the foreshadowing had taken place 135 years earlier; for Heister wrote as follows:—

“When the intestines are wounded, but not let out of the abdomen, and therefore their wounds are out of reach, the surgeon can do nothing but keep a tent in the external wound, according to the method of dressing laid down at chap. v., and after this bleed the patient if his strength will admit of it, advising him to rest, to live abstemiously, and to lie upon his belly. The rest is to be left to Divine Providence and the strength of his constitution. But the question may be asked here, Whether a surgeon may not very prudently in this case enlarge the wound of the abdomen, that he may be able to discover the injured intestine, and treat it in a proper manner? Truly I can see no objection to this practice, especially if we consider that upon the neglect of it certain death will follow, and that we are encouraged to make trial of it by the success of others. Schacherus, in *Programmate Publico*, Lipsiæ, ed. 1720, mentions a surgeon who performed this operation successfully. So Cheselden, of London, gives us a history where, in the hernia incarcerata, he laid open the abdomen, returned the intestines, and perfectly cured his patient. See his ‘Treatise on High Operation,’” etc.

Very possibly, on looking up these cases, it will appear that there was a good deal more than foreshadowing of the modern practice.

Let me give another instance. We are apt to think of nephrotomy and nephro-lithotomy as among the latest developments of surgery. But Heister has the following passage at the conclusion of his chapter on lithotomy by the *apparatus minor* :—

“Lastly, as there are many cases in which a stone in the kidney can by no means be resolved or removed by medicines, and the patient being continually in the most extreme torture, is desirous by any means to be freed ; it may not be inconsistent with our design in this place to resolve the question, whether a stone in the kidney may not be cut out in such a case. This is a subject seldom treated of in books of surgery, and which I choose to treat of in this place, as the operation may be performed by the *apparatus minor*, either with the scalpel alone, or with the hook and forceps. The generality of those who have said anything upon the subject in their writings, think it a proposal too dangerous to be practicable, and therefore treat it with neglect, when at the same time there are extant many arguments, both from reason and experience, which recommend such a practice to be absolutely necessary, especially under particular circumstances. For we have many instances of patients who have been freed from the stone in the kidney by a wound in that part, received accidentally in the back ; and that, in some cases, without any dangerous symptoms. Among other instances which have come under my own observation, I shall only mention a late

one, of a man who was wounded by another with a knife, upon the region of the right kidney, in his back, in the year 1735, in such a manner that blood and bloody urine was voided in great plenty for several days through the wound and through the urethra. But after he was transmitted to my care at *Helmstadt*, he was happily cured within the space of four weeks. It is therefore most certain that wounds of the kidneys are not always mortal, as some have imagined, but frequently curable; especially those inflicted on the back, without penetrating into the cavity of the abdomen. And Hippocrates, though he interdicts his pupils from performing the operation of lithotomy, does yet direct them, in treating of disorders in the kidneys, '*to make an opening where they are elevated and tumified; that after extracting the gravel and discharging the matter, they may be healed with diuretics. For by such an opening or incision there may be hopes of a recovery; otherwise, the patient is a dead subject.*' And in the same book he says: '*When there is a suppuration of the kidney, and it forms a tumor near the spine; in that case a deep incision is to be made upon the tumor near the kidney,*' or as he says in another place, '*into the kidney itself.*' From whence it appears that he did not think an incision in this part so greatly to be feared as a wound in the bladder. Rossetus also, and the accurate anatomist Riolan, and others, are induced by many reasons to think that nephrotomy may be often practised with success, if the incision be made in that

part where the calculus is perceptible, taking care to avoid wounding the emulgent artery, veins, or the ureter, and to prevent the wound from penetrating into the cavity of the abdomen. But nothing can be more reasonable than to perform nephrotomy, when we are directed to it by nature, pointing out the place, by a tumor and abscess formed in the loins from a calculus in the pelvis or kidney. In such a case we are also supported by the advice and authority of Schenkus, Wedelius and Meekren, together with Lavaterus, formerly an eminent physician and surgeon of Helvetia, with whom I amicably cohabited for some time, in the year 1710, he then practising surgery at London with great applause. He at that time told me that he had not only performed this operation with success in the above mentioned case, but had also publicly declared: ‘I perform the operation of nephrotomy, on either of the kidneys, when nature directs to that practice by forming an abscess.’ ‘There is therefore no apparent reason why this operation should be condemned under the forementioned circumstances, as it is by a great many. I should rather advise, according to my own practice, never to omit nephrotomy, when nature thus points out the road to it.”

I trust the interest of this quotation may excuse its length; and will only mention that in Petit’s third volume may be found detailed two cases of nephro-lithotomy, one of which was entirely successful, and in the other the operation could not by any means be assigned as the

cause of the death of the patient. Petit rarely gives the dates of his cases, so that we cannot tell by how long a time he anticipated the operators of the present day.

It would be interesting, did time permit, to go somewhat into detail as to the views of our authors on the subject of hernia. Part of the vagueness of their ideas must be ascribed to the fact that the rationale of the descent of the testicle was at that time unknown, having been first demonstrated by Hunter at a later period. Both Pott and Petit discuss the question of herniotomy without the opening of the sac, and Heister briefly refers to it. They also are greatly concerned as to the best method of dealing with protrusions of omentum. A curious fact may be noted here, viz., that Pott does not once use the term " taxis." It may also be mentioned that he recommends the inversion of the patient for the reduction of hernia—a plan more than once brought forward as new in our day.

I have before spoken of the want of classification in the nomenclature of disease, as shown in the writings of these eminent men. A striking instance of this may be noted in their discussions of the various fistulæ. "The fistula lachrymalis" seems to have been to them an entity by itself; "the fistula in ano" another. As to the former, we find that Pott and Heister could devise no better remedy than breaking through the wall of the orbit and forcing a passage into the nasal cavity. Petit,

on the other hand, very justly condemns this rough practice, and recommends dilatation of the canal by bougies.

The mention of fistula in ano, which Petit discusses under the head of "ulcers," reminds me to quote from him a passage illustrating a curious feature of human nature. "It is known," says he, "that after the operation which was performed upon Louis XIV, this procedure became very common, not because there were more fistulæ than before, but because many people who had concealed infirmities of this kind ventured to declare them; some even submitted to the operation by way of gaining favor. It became, so to speak, the fashion, and, as the city copies the court, it was so frequently performed in Paris, that for a time no one talked of anything but fistula; it alone seemed to be worthy of the attention of surgeons; yet, in spite of all the care given to the perfecting of the operation, cases were often heard of in which it had failed and in which it had to be repeated."

Another singular statement is made by Petit in connection with the subject of hemorrhoids, which also, by the way, he places under the general head of "ulcers." He says: "Of the patients whom I have treated for internal hemorrhoids, the Americans and the inhabitants of British ports have furnished the larger number; and among these I have found few who had not as the source of their malady either scurvy or syphilis, and often both." I must confess my-

self puzzled to know who and of what class these "Americans" were. They certainly had nothing in common with the travelling Americans of our own day ; they cannot have been either Indians or negroes, of whom even now many educated Frenchmen are convinced that the population of this hemisphere mainly consists, and I have no theory to suggest on the subject.

At the present day the pathology and treatment of hydrocele are matters of no special discussion, and the condition itself is one of the minor troubles with which surgeons are called upon to deal. It is somewhat interesting to see what opinions were held by our authors, especially with regard to the best method of treatment. Heister mentions five plans: free incision and stuffing the cavity ; caustic ; the seton ; the wax tent ; and finally, with just indignation, "the method practised by itinerant medicasters, by which they make an incision in the inguen, and tearing the scrotum off the testicle, they extirpate it together with the process of peritonæum, notwithstanding both of them are in a sound state." Petit speaks only of puncture with the trocar, or of free incision. Pott speaks of puncture as a palliative, and refers also to a plan of injection of the sac for the radical cure as having been "quite laid aside" as useless ; he does not say what was the nature of the liquid employed. He advises a large incision of the tunica vaginalis, but is said by Earle to have abandoned this plan for the last twenty years of his life. He speaks very favorably of the seton.

We have all heard of "Heister's screw" for opening the mouth, and most of us have used it or seen it used. Now let me quote what he himself says: "But in my opinion every prudent surgeon will reject these instruments as pernicious." He afterward speaks with approval of the use of the *speculum oris*—a much less powerful instrument—"for inspecting the mouth, in examining several disorders of its parts, or in performing any operation on the palate, tonsils, or teeth." No doubt the two articles were confounded by some careless compiler.

In most text-books, and by teachers of surgery, it is customary to speak of the tourniquet in common use as Petit's. And we hear also commonly the term "Spanish windlass" as applied to the well-known handkerchief twisted up with a stick. But in fact the latter was "the tourniquet," "which," says Heister, "we use with great success after amputations." Petit modified this, but the instrument produced by him was not by any means that which we know by his name. The double bridge seems to have been a German invention; when the four rollers were introduced I have been unable to ascertain.

Did time permit, I should be glad to say something of the views of our authors on the subject of fractures and dislocations; the views, that is, of Heister and Pott, for neither in the text nor in the plates of Petit's work does it appear that he meant to take up this topic. I must, however, content myself with calling your

attention to the sound sense of Pott's remarks on the relaxation of muscles by position, in broken limbs. His deductions as to treatment are not borne out by experience, or, at least, have not been thus far, but it is not impossible that appliances may yet be devised by which the theory may be made available. As to the fracture just at and above the ankle joint, with which his name is still associated, I need say nothing, as it is familiar to every student of surgery.

I have said that Petit left nothing in regard to the matter of fractures ; but in Heister's work he will be found credited with the invention of an apparatus which, in a modified form, the whole civilized world knows as the "fracture-box." I think very few of the vast number of surgeons who have used this appliance have had the slightest idea of its origin.

Of course, the name of Pott is best known now, and in all probability it always will be, in connection with the subject of spinal curvature from caries. His paper on this subject, in the third volume of his works, seems to me admirable—a piece of sound reasoning from accurate observation, and extremely modest in its tone. I think such writings as this are beyond the reach of decay with time ; they have a merit of their own, and although they may be forgotten, their value remains. A fact, or a sound explanation of facts, added to the sum of human knowledge, is worth much ; if it is a fact from which may be deduced results of wide and

permanent benefit to a class of sufferers previously without relief, there is no standard by which to estimate the service rendered to mankind by its discoverer. The pointing out of the causal relation of caries of the vertebræ to a condition which had, up to that time, been classed among the palsies, was the laying of the corner-stone of the present treatment of disease of the spine, although Pott's therapeutical ideas were of the crudest.

I had noted many other points to which it was my intention to refer at more or less length, but I fear I have taxed your patience too largely already. My object has not been either to criticise or to eulogize. These departed worthies loom up among their contemporaries, and challenge the attention of all who would trace the progress of our beneficent science.

Heijster had the advantage of both Petit and Pott, in that he published his own finished work, and gave it to the world himself; while they had gone over to the majority, and their control could no longer be exercised in correction and addition. We all know that one of the ancients exclaimed, "Oh that mine adversary had written a book!" If his adversary had not only written a book, but had had it posthumously published, he would have had the game in his own hands.

I have already spoken of the vast increase in medical literature at the present day, as compared with that which the men of the last century had at their disposal. Growth in this respect may be looked for in the future with

certainty, but its extent is a matter beyond calculation. We are now the moderns ; we shall soon be the ancients. Our work will be left to the criticism of those who are now unborn, and our discoveries and theories, our instruments and methods of treatment will be commended, rejected or modified, established or superseded, just as has happened to those of all the generations before us.

When the great Napoleon was engaged in making history, and in the course of the process found himself and his army in Egypt, it is said that he sought to stimulate them by telling them that from the heights of the pyramids forty centuries looked down upon them. Whether he ever said this or not is doubtful ; but if he did, he simply uttered an absurdity. The forty centuries were past and gone, and before the dead eyes of their monuments, tragedy and comedy, heroism and cowardice, glory and disgrace, were one and the same. The past may appeal to us in trumpet tones by the examples left us by its mighty ones ; but it is the future which must pronounce its verdict as to what we have done or left undone.

“Time is the judge ; time has no friend nor foe ;
False fame must wither, and the true must grow.”

